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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347

EXAMINER	
MARIAM, DANIEL G	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/885,288	CADWELL, JOHN A.	
	Examiner	Art Unit	
	DANIEL G. MARIAM	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *27-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,23-26 and 37-44* is/are rejected.

7)☒ Claim(s) *19-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/15/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election of Group I (claims 1-26 and 37-44) in the reply filed on September 14, 2004 is acknowledged. Since applicant fail to indicate the election is being made with traverse, the election has been treated as election without traverse of Group I (claims 1-26 and 37-44).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 recites the limitation "the unencoded" in line 3. There is insufficient antecedent basis for this limitation in the claim.

4. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. While claim 11 recites the limitation "discarding the frame data if a size of the frame data is greater than a size threshold", the specification says: "If the cumulative frame data size is below the threshold, each compressed pixel block data is saved at block 336. If, however, the cumulative frame data size is above the threshold, the pixel block data is resaved, but in a low-resolution format"(See page 14, lines 5-7). Given this statement in the specification, it is unclear how the frame is discarded if the frame size is greater than a size threshold? Please clarify.

Since claim 12 directly depends on claim 11, it is also rejected under 35 U.S.C. 112, second paragraph, for the same reason set forth above for claim 11.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-2, 5, 7-10, 13-14, 25, 37-38, and are rejected under 35 U.S.C. 102(a) as being anticipated by Wittenstein, et al. (6,026,180).

With regard to claim 1, Wittenstein, et al. discloses obtaining a first frame of digital data corresponding to a digital image (See for example, col. 5, lines 15-20); generating a color-table for the first frame of the digital data, the color-table corresponding to at least one pixel color contained within the first frame, mapping the first frame of digital data according to the color-table (See for example, col. 5, lines 21-27); obtaining a preceding frame, i.e., previous frame, and/or a frame before, of digital data corresponding to the digital image, generating a cumulative color difference, i.e., color difference of the tile as a whole, between the first and the preceding frames of the digital data, and updating a frame data if the cumulative difference is above a difference threshold, wherein the frame data is operable to regenerate the first frame of the digital data (See for example, col. 5, lines 28-44; and col. 12, line 60 through col. 13, line 61).

With regard to claim 2, the method as recited in Claim 1, wherein the preceding frame of digital data is previously mapped with a color-table corresponding to at least one pixel color contained within the preceding frame (See for example, col.5, lines 24-27).

With regard to claim 5, the method as recited in claim 1, wherein the color-table includes up to sixteen colors contained within the first frame (See for example, col. 5, lines 21-27).

With regard to claim 7, the method as recited in claim 1, wherein mapping the first frame Includes: subdividing the first frame of the digital data into two or more pixel blocks; mapping a first pixel block according to the color table (See for example, col. 13, lines 1-7; and col. 5, lines 21-27).

With regard to claim 8, the method as recited in claim 7 further comprising repeating the method for a second pixel block (See col. 13, lines 25-30 and 46-55).

With regard to claim 9, the method as recited in claim 1, wherein generating a color-table includes randomly sampling individual pixels within the first frame of the digital data to obtain at least one color in the color table (See col. 5, line 47 – col. 6, line 42).

With regard to claim 10, the method as recited in claim 1, wherein generating a color-table includes retrieving a predefined color-table, i.e., previous color table (which reads on item 302, in Fig. 4 of Frederiksen).

With regard to claim 13, a computer-readable medium having computer-executable Instructions, i.e., algorithm, for performing the method recited in any one of claims 1-12 (See for example, item 113, in Figure 1; and Appendix 1-7).

With regard to claim 14, a computer system having a processor, a memory, and an operating environment, the computer system operable for performing the method recited in any one of claims 1-12 (See Figure 1).

With regard to claim 25, a computer-readable medium having computer-executable modules the computer-readable medium comprising a synchronous video compression module operable to obtain a first and second frame of digital data and generate a compressed frame data (Col.4, lines 5-42), wherein the compressed frame data is configured to include any cumulative color difference below a compression threshold (See col.13, lines 54-61).

With regard to claim 37, obtaining a first frame of digital data corresponding to a digital image, subdividing the first frame of the digital data into two or more pixel blocks, i.e., tiles (See for example, col. 13, lines 1-7); generating a color table for each pixel block in the first frame of the digital data, the color table corresponding to at least one color contained within each pixel block, mapping each pixel within the pixel block according to the color table (See for example, col. 5, lines 21-27; and Figs. 2-3); obtaining a preceding frame of digital data corresponding to the digital image, generating a cumulative color difference between each pixel block in the first frame of data and a pixel block in the preceding frame of the digital data (See for example, col.13, lines 10-34); and updating a frame data if the cumulative color difference between each pixel
block is above a different threshold, wherein the frame data is operable to regenerate the first frame of the digital data (See for example, col.5, lines 28-34).

With regard to claim 38, wherein the preceding frame of the digital data is mapped with a color table corresponding to at least one color contained within the preceding frame (See for example, col. 5, lines 24-27).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 15-18, 23-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wittenstein, et al. (6,026,180) in view of Russ (The Image Processing Handbook: Second-Edition).

With regard to claim 15, Wittenstein, et al. (hereinafter "Wittenstein") discloses obtaining a first frame of digital data (See for example, col. 5, lines 15-20); obtaining a second frame of digital data, where the second frame of digital data is representative of a time preceding the first frame of digital data (See for example col. 13, lines 10-30); comparing the cumulative color difference between the first and second frames of digital data, mapping the cumulative color difference according to a (pseudocolor scale), displaying a resulting frame of digital data (See for example, col. 13, lines 14-53; and col. 5, lines 21-27). Wittenstein does not expressly call for mapping the cumulative color difference according to a pseudocolor scale or falsecolor scale. However, Russ (pages 32-35 and 213-216) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Russ into the system of Wittenstein, and to so would at least increase the visible color difference between frames or pixels, and also aids a user who wishes to see small or gradual changes in image brightness.

With regard to claim 16, the method as recited in claim 15, wherein comparing the cumulative color difference includes: obtaining a first pixel block, tile, from the first frame of digital data, obtaining a first pixel block from the second frame of digital data, and comparing the cumulative color difference between the first pixel block from the first frame of digital data and the second frame of digital data (See for example, col. 13, lines 6-9 and lines 25-30).

With regard to claim 17, the method as recited in claim 16, wherein comparing the cumulative color difference between the pixel block, i.e., tile, data includes comparing the color difference for each pixel in the pixel block data (See for example, col. 13, lines 28-29 of Wittenstein).

With regard to claim 18, the method as recited in claim 16 further comprising: obtaining additional pixel blocks from the first and second frames of digital data, comparing the cumulative color difference for each additional pixel block, repeating the comparison until no pixel blocks remain in the first and second frames of digital data (See col. 13, lines 25-47 of Wittenstein).

With regard to claim 23, a computer-readable medium having computer-executable Instructions, i.e., algorithm, for performing the method recited in any one of claims 15-22 (See item 112, in Fig. 1; and Appendix 1-7).

With regard to claim 24, a computer system having a processor, a memory and an operating environment, the computer system operable to perform the method recited in any one of claims 15-22 (See Figure 1).

With regard to claim 26, Wittenstein (as modified by Russ) further discloses a computer-comprising a synchronous video processing module operable to obtain a first and

second frame of digital data (See for example, Fig. 1 of Wittenstein) and generate a processed frame data, wherein the processed frame data is configured to map any cumulative color difference according to a pseudocolor scale (See pages 32-35 and 213-216 of Russ).

9. Claims 3-4 and 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wittenstein (6,026,180) in view of Frederiksen (4,743,959).

With regard to claim 3, Wittenstein discloses all of the claimed subject matter as already discussed above in paragraph 6, and incorporated herein by reference. While Wittenstein discloses wherein the first frame is a bitmap image (See for example, col. 4, lines 61-63), Wittenstein does not expressly call for truncating at least one bit of the first frame bitmap prior to generating the color-table. However, Frederiksen (See for example, col. 10, lines 33-43) teaches this feature. Therefore, it would have been obvious to employ the teaching as taught by Frederiksen into the system of Wittenstein, and to do so would at least enhance the data compression.

With regard to claim 4, the method as recited in claim 3, wherein truncating at least one bit of the first frame includes truncating the three least significant bits, i.e., 3*LSB's*, of the bitmap image (See Fig. 3b of Frederiksen).

Claim 39 is rejected the same as claim 3. Thus, argument analogous to that presented above for claim 3 is applicable to claim 39.

Claim 40 is rejected the same as claim 4. Thus, argument analogous to that presented above for claim 4 is applicable to claim 40.

With regard to claim 41, the method as recited in claim 37, wherein the color table includes up to sixteen colors contained within each pixel block (See for example, col. 5, lines 21-27 of Wittenstein).

With regard to claim 42, the method as recited in claim 37, wherein generating a color table includes randomly sampling individual pixels within each pixel block of the digital data to obtain at least one color in the color table (See for example, col. 5, line 47 – col. 6, line 42 of Wittenstein).

With regard to claim 43, a computer-readable medium having computer-executable Instructions, i.e., algorithm for performing the method recited in any one of claims 37-42 (See item 113, in Fig. 1; and Appendix 1-7 of Wittenstein).

With regard to claim 44, a computer system having a processor, a memory, and an operating environment, the computer system operable to perform the method recited in any one of claims 37-42 (See Fig.1 of Wittenstein).

Allowable Subject Matter

10. Claims 19-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Numbers: 4914508, 5438989, 5544286, 5625759, 5664029 (See for example, col. 4, line 22 through col.7, line 44), and 6373890.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH M. MEHTA can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DANIEL MIRIAM
PRIMARY EXAMINER

Thursday, May 26, 2005